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& Record Review

## STEREO STARS

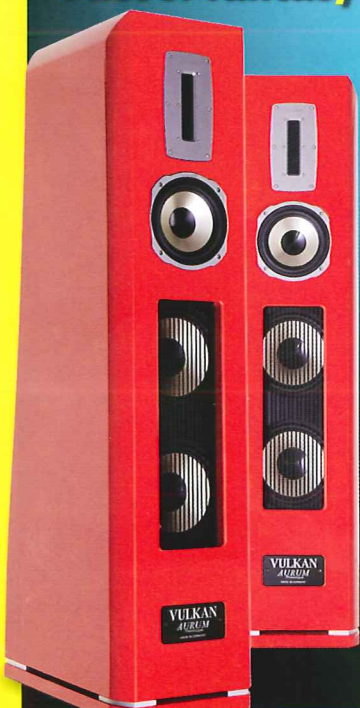
**Exclusive:** Constellation Audio's Virgo & Centaur



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DEREK AND THE DOMINOS



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# Constellation Virgo/Centaur

Constellation is a new range of electronics designed by, er, high-end audio superstars. We assess the Virgo preamplifier and Centaur monoblock power amplifiers  
 Review: **Ken Kessler** Lab: **Paul Miller**

**F**ew manufacturers have followed the Crosby, Stills, Nash & Young route to superstardom, though it makes sense. You assemble a 'supergroup' to create your products, headed – hopefully – by one whose ego, personality quirks or other debilitating characteristics don't get in the way. In this case, the 'Graham Nash' of the group is one Peter Madnick.

Although he looks exactly like what Hollywood would cast for a mad scientist – his surname is no accident! – Peter is so level-headed and clear-thinking that he constantly astonishes with laterally-conceived answers to gnawing questions. His sheer intelligence was enough to power the creation of one of hi-fi's most consumer-friendly ranges ever: the bargain digital products of Audio Alchemy.

## A WHOLE 'NUTHER THING

Constellation, though, is a whole 'nuther thing, despite Madnick stating that he was told to design the best and then cut the prices. Like everything, prices are relative: the Virgo preamplifier and Centaur monoblocks reviewed here are the models from the 'economy' Performance range, yet total £72,500. As for Reference prices, I shudder to think...

While the companies are completely separate, the owners of Constellation are also behind the Continuum turntable, so clearly their idea of worth is not far removed from, say, estate agents in Mayfair. Equally, they understand the need for a 'no compromise' attitude and some form of provenance to justify such costs, so they told Peter to assemble his 'fantasy football team', or, more appropriately, given that this is about music, the aforementioned supergroup.

And Madnick has created a team so overwhelmingly heroic that anyone with even an inkling of the high-end's history

will be dazzled, recalling the ill-fated Lineage line – coincidentally conceived by one of the Constellation stars. 'For low-level analogue design,' says Madnick, 'we engaged the services of John Curl – the master of low-noise complementary-differential JFET design. John and I had worked together numerous times over the years. Who better to turn to for our phono preamplifiers and as a contributor to our line-stage design?

'For power, Bascom King was the obvious choice. Expert in extracting the best from tube designs, he's now charged with perfecting the sound of a unique all-MOSFET design. When it came to the new world of media players, my old partner at Monster Cable, Demian Martin, had proven himself at the forefront of the industry.'

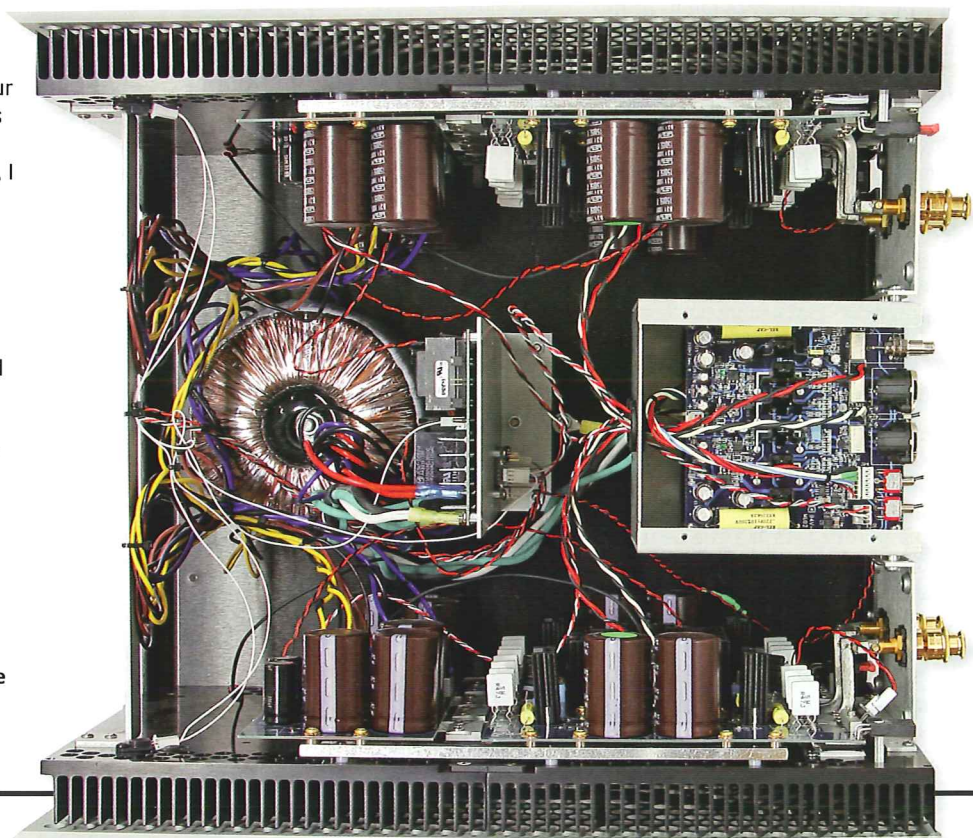
Madnick also knew that the stuff had to look as good as the Reference line, even if costs meant that it would be nowhere near as radically styled. The exterior design

was created by Alex Rasmussen and Brad Babineaux at Neal Feay Industries in Goleta, California. (Did I forget to mention that this brand is as Left Coast as CSNY? Curl, it should be remembered, helped create the Grateful Dead's Wall of Sound.)

## TAKING UP REAL ESTATE

While a pretty-enough design, the Virgo is rather anodyne, its greyness John Major-like. A plain-Jane outboard power supply feeds it via two umbilical cables, connecting at the back where you find rows of both XLRs and phono sockets for every input and output: four sources, two sets of outputs and RS232 and USB inputs for networks and firmware upgrades.

At the front, the central panel's 432x230-pixel screen is flanked by rotaries for balance and volume, while other operations are accessed through menus activated by a row of five buttons underneath the slightly protruding display



**RIGHT:** FETs throughout – a J-FET voltage stage [inset square] and two single-ended N-channel MOSFET power amp modules on each of the huge internal heatsinks the flank the Centaur



panel. These include muting, power on from standby, 'home' to return to the basic screen, display intensity, input selection and the setting of input levels. The nicely-made aluminium remote control offers standby, mute, volume up/down, source selection, balance and phase inversion.

Let's get the whinge out of the way: the fascia volume control is *irritating*. There is no other word for it. Nothing about it is intuitive – even the display all but hides the minus sign next to the digits showing the level setting. As for the speed of raising and lowering the volume, I never got used to it, but almost wet myself watching the normally unflappable importer cursing its recalcitrance. Instead, I reverted to the remote control whenever possible.

As for the Centaur monoblocks – all you need to know before you even approach the lorry delivering them is that each weighs 98lb in old money. They're huge, and – as does the preamp – they like free space around them, though nothing ever grew hot to the touch.

## CENTAUR DIRECT

Novelty abounds inside the huge Centaur monoblocks. Instead of using one power amp stage comprising multiple transistors, each amplifier employs four 125W modules in a balanced bridged configuration [two are shown on the PCB, adjacent]. Neither are these modules entirely conventional as they only employ N-type MOSFETs, rather than complementary NPN and PNP pairs, in a single-ended configuration. The concept, according to Constellation, is to achieve the delicate sound and musicality of a small single-ended triode amp, albeit one with the capacity to 'play much louder'.

Each Centaur has three inputs, including traditional RCA and balanced XLRs in addition to a second XLR that services its proprietary 'Constellation Direct' option. This input omits one of the company's J-FET line stage modules, making use of the higher output voltage capacity of the Virgo preamp [see Lab Report, p27] to demand less voltage gain in the Centaur. The overall pre/power voltage gain remains the same just as there's no change in the maximum power output of the Centaur – there's simply a higher voltage gain in the Virgo and proportionally less in the Centaur in 'Direct' mode. Although logic might suggest 'Direct' will always sound better, in practice our experience was the reverse – Ken and I both enjoyed a more open, expressive and simply more 'relaxed' sound via the conventional balanced XLR inputs in my system. It's likely that the relative sensitivity of the loudspeakers and analogue output level of the source will play a big role in which mode is preferred. **PM**

These are seriously powerful amplifiers at a factory-rated 500W apiece into 8ohm, with a switch-on regimen to ensure that nothing nasty happens. You hold down the bar across the front for three seconds, it turns red, then goes through a sequence of self-assessment before the light turns blue for operational mode.

## A CRITICAL CHOICE

Now the conundrum: at the back, you have a choice of single-ended or balanced operation, but you have two options for the latter: 'Balanced' for use with non-Constellation preamps and 'Direct' for use with a Virgo or one of its siblings. We tried both, and got different results, so I am (1) at a loss to state which is 'better', but (2) overjoyed to note that in both cases, the changes were audible enough to leave no doubt as to which was better.

*'Eleanor McEvoy was in the room, with a ghostly, eerie authenticity'*

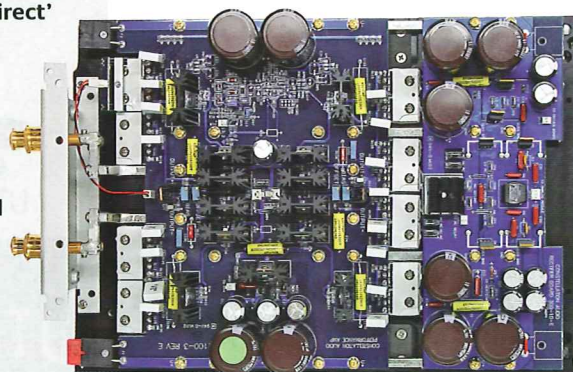
**ABOVE:** A 432x230-pixel screen on the Virgo preamp's fascia is flanked by rotaries for balance and volume. The preamp is fed by an outboard power supply in matching grey (left)

Here's what happened: in one system, using Magico S5s, 'Direct' was preferred. In PM's system, with B&W 801s, 'Balanced' was superior. This is crucial if you have any intention of shopping for Centaurs: you *must* try both.

What was evident in both cases had nothing to do with actual wattage, power, call it what you will, but with the *perception* of mass and power. With one setting, the system sounded 'OK': clearly high-end, but not particularly dynamic or open. In the other position, it was like it had mainlined Viagra.

We are not talking about subtle changes, like going from nickel banana plugs to gold-plated, or lifting your cables off the floor, or other mumbo-jumbo. This is the real deal, as important as correct VTA or speakers being in phase. One track was enough to convince us of the importance of getting this right for room or system.

As some of you know, I am so in love with Eleanor McEvoy's version of 'God Only Knows' on *If You Leave...* [Moscodic MOSCD4010] that it could be the co-respondent in a divorce (I remain happily married, by the way). Paul Miller had thought the sound of the CD was only ↻





**ABOVE:** Pressing the bar on the front of the Centaur monoblock for three seconds initiates a series of self-diagnosis checks. Once completed, the light turns from red to blue and the amp is ready for use

so-so, distinctly underwhelming when you consider that she's an audiophile deity. But he'd been listening to it with the Constellations in the Direct setting.

We switched to Balanced, I put the disc on – just voice and piano – and Paul just grinned from ear to ear. PM is not a man prone to error, but he quickly recanted his opinion of the disc. The Centaurs' settings were enough to transform a CD from good-to-bad and back to, well, *incredible*.

McEvoy was in the room, with ghostly, eerie authenticity. The palpability was almost disturbing, simply because the realism was of an order rarely achieved in sound reproduction. I smiled heavenward to the late J Gordon Holt, who succinctly identified those rare moments when a sound system lulls you into thinking that the music really is in your listening space – almost a dream state where one's senses are well and truly fooled.

Another exquisite female voice followed that sparse, unplugged session, Eva Cassidy's achingly gorgeous 'People Get Ready', from the new *Best Of Eva Cassidy* [Blix G2-10206]. Now I have no idea what techniques were used for Cassidy, who was a virtual unknown at the time of her death, and whose exposure to major labels was minimal. Perhaps what we're getting is all posthumous. Suffice it to say, this live recording oozed atmosphere.

Most impressive was the drumming, crisp and solid, with weight and scale, behind those soaring vocals. I had the sensation of a full-scale drum kit, not an Airfix-like 1/24th scale facsimile. A fragile guitar stage-left created a gossamer-light melody, perfectly complementing the

wispiness of the cymbals. The cohesion was remarkable for a live recording, so clean that the next track, 'Anniversary Song', did not jar with its extra, heightened, studio-derived clarity.

#### POWER AND DELICACY

With all that power on tap, I just had to dig out Kodo's *Warabe* [Sony SRCL 4671], the opener 'Yokigen' featuring relentless drumming that immediately evokes some battle scene in a Kurosawa epic. The

Centaurs are no slouches when it comes to slam, but the delight was the roundness to the sound, a quality that imparted the sense that the air being moved was of a greater quantity than the woofers could ever

manage. With flute hovering over the drums, the Constellations juggled delicacy and force simultaneously, favouring neither over the other.

While Lou Rawls' *At Last* [Blue Note CDP 7 91937] and Keb' Mo's *Peace... Back By Popular Demand* [Okeh/Epic EK 92687] delivered vocal textures that could not trip up the Constellations, by the time I got to them, I expected no less. The latter's bottleneck playing, the solo piano on 'The Times They Are A'Changin'', the drum attack on 'For What It's Worth' – again, the realism stops you in your tracks.

Because those recordings are sublime by any standards, it was time to delve into material of possibly questionable sonic worth. *Hits Of The '60s* [Music Club MCCD 028] contains treasures like the Small Faces' 'Itchycoo Park', Petula Clark's 'Downtown', some Kinks in mono, Status Quo's 'Pictures Of Matchstick Men' – chart classics. Long ago, I learned never ☞

*'It's easy to get carried away in the presence of a system like this'*

## PETER MADNICK

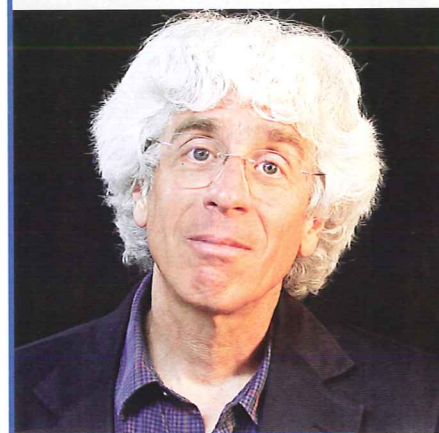
Peter Madnick, a 40-year audio industry veteran, is 'project manager' for the Constellation electronics. He told *HFV*: 'In 2009, I was approached by Constellation to help them fulfill their dream of designing the world's finest audio equipment. My years in audio afforded me the opportunity to work with a wide range of engineering talent. My job would be to assemble a team of the very best, design the best, get it recognised as such, then try to do it again for one-third of the price.'

'My history, and that of my immediate staff, included the development of over 400 components: high-end and mid-fi audio, video, and other home entertainment items.'

Among them were Audio Alchemy products, especially outboard DACs, universally hailed for their performance, but designed to a price. Much of their work for Audio Alchemy can be found in Constellation models. 'For example, the DSP processing and de-jitter techniques were pioneered in our DACs, power supply filtering, microprocessor architecture, FPGA design and many others.'

'The efforts of my expert staff, and others as needed, have brought us to where we are today.'

Madnick has overseen the creation of the cost-no-object Reference series, complemented by the Performance series – schematically identical to the Reference, but executed more affordably. As Madnick says, 'Our goal is achieving *elegant simplicity*, while hiding sophisticated hardware and software.'



# LAB REPORT

## CONSTELLATION VIRGO/CENTAUR



**ABOVE:** Constellation's Virgo preamp [top] offers four sets of balanced (XLR) and single-ended (RCA) ins with pairs of XLR/RCA outs. The network and USB ports are for control/updates, the other multipin sockets connect to the outboard PSU. The Centaur [bottom] has parallel 4mm speaker outlets, RCA and low/normal gain XLR ins

to assume that just because a track was known primarily as a single, best heard over a small tranny radio beneath the covers at 1am and with school in the morning, that it would be a sonic nightmare. Hearing in stereo for the first time such stunners as Dion's 'The Wanderer' taught me not to prejudge.

### AS CLOSE AS IT GETS

By whatever magic Madnick and his A-team created these units, the Searchers' 'Needles & Pins' – which I have heard at least 1000 times – delivered tiny details that previously eluded me. You could analyse the gorgeous harmonies, especially when the group splits apart left/right at 1m 05s into the track. The jangling guitar, more tuneful bass: it was like re-discovering *The Ginger Man* after 45 years.

It's easy to get carried away when in the presence of a system such as one powered by the Virgo and a brace of Centaurs. Those of you fortunate enough to own 'super' systems know the sensation – it's the same sense of near-grace one feels when driving a Ferrari or sipping a glass of Solaia.

Sadly, the price only becomes secondary if you're astoundingly wealthy. For the rest of us, the

Constellations are something to which we might aspire, for they are game changers. They even inspired Paul to say that they're probably the best *analogue* amplifiers he's heard.

Having auditioned this system in two entirely different settings, I have no doubt that we are experiencing the birth of a new reference-calibre line of electronics. Yes, the price is forbidding, the size off-putting, the preamp ergonomics the antithesis of 'real-time', tactile rotaries. But what you'll hear is as close to the source as it gets. This is a notable triumph by any standards. ⚡

### HI-FI NEWS VERDICT

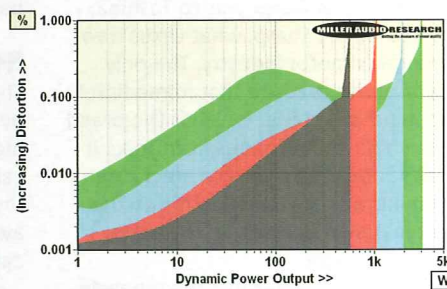
Though I no longer lust after the unobtainable, were I to suddenly find, as Tevye desired, a small fortune, and I had a craving for something solid-state, I'd need to choose between the Constellations, D'Agostino's Momentums and the big darTZeels. But that's like choosing between three monumental wines – they're *all* good. However, recalling another supergroup, you can buy them on blind faith.

Sound Quality: 90%

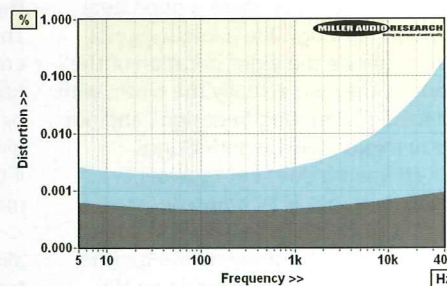


Issues with the polling of its rotary-encoder volume knob aside, the Virgo preamp is a textbook performer. XLR input 1 shows the highest PSU-related intermodulation (-115dB), XLR input 4 the lowest (-130dB) but all offer a supremely flat response ( $\pm 0.02$ dB from 1Hz-100kHz), a fabulously wide 99.5dB A-wtd S/N ratio (re. 0dBV) and a huge 25V output capacity [see boxout, p23]. Distortion increases with the Virgo's output above 1V to 20V (0.0005% to 0.15%) which may explain the differences we heard between normal and 'Direct' Centaur inputs but it remains impressively uniform with frequency [see black trace, Graph 2 below]. Distortion also increases with power output via the Centaur, from 0.0008% at 1W/8ohm to 0.003% at 10W, 0.02% at 100W and 0.09% at 400W and it also increases more obviously at HF when compared to the Virgo preamp [see blue trace, Graph 2].

Constellation rates the Centaur at 500W/8ohm which it achieves – just – at 510W at 1% THD, and it nudges over the 800W hurdle at 825W/4ohm. There's more in the tank under dynamic conditions, the Centaur delivering 570W, 1.06kW, 1.93kW and 3.01kW into 8, 4, 2 and 1ohm in 10msec bursts at up to 1% THD [see Graph 1, below], so it'll drive any likely partnering speaker with ease. The output impedance is a uniform 0.018-0.027ohm from 20Hz-20kHz, increasing thereafter, while the response – into 8ohm – is flat to within  $\pm 0.04$ dB from 1Hz-100kHz. The 89.9dB A-wtd S/N (re. 0dBW) is also very wide. Readers may view comprehensive QC Suite test reports for the Constellation Audio Virgo preamp and Centaur Mono power amp by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads



**ABOVE:** THD vs. extended frequency; Virgo (1V out, black trace) vs. Centaur (10W/8ohm, blue trace)

### HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	510W / 825W
Dynamic power (<1% THD, 8/4/2/1ohm)	570W / 1.06kW / 1.93W / 3.0kW
Output imp. (20Hz-20kHz, pre/power)	7.5-77ohm / 0.018-0.028ohm
Freq. resp. (20Hz-100kHz, pre/power)	-0.0 to +0.1dB / -0.00 to +0.04dB
Input sensitivity (for 0dBV/0dBW)	47mV (pre) / 145mV (power)
A-wtd S/N ratio (re. 0dBV/0dBW)	99.7dB (pre) / 89.9dB (power)
Distortion (20Hz-20kHz, 1V/10W)	0.0004-0.0007%/0.0013-0.045%
Power consump. (pre/idle/rated o/p)	33W / 170W/800W (each)
Dimensions (WHD Virgo/Centaur)	432x140x400/432x280x508mm